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errata

Exports—U.S. Crude Tall Oil

(Short Tons)	1981
NORTH AMERICA	
Canada	1,202.12
Mexico	4,577.27
Guatemala	5.31
El Salvador	—
Honduras	—
Costa Rica	—
Panama	9.67
Jamaica	8.40
Haiti	—
Dominican Rep.	3.99
Neth. Antilles	2.10
SOUTH AMERICA	
Colombia	27.17
Venezuela	428.85
Guyana	12.82
Surinam	—
Ecuador	—
Peru	29.33
Chile	—
Brazil	1,186.73
Argentina	24.62
EUROPE	
Sweden	1.16
United Kingdom	0.10
Netherlands	1,021.93
Belgium	17.80
France	3.87
West Germany	526.53
Austria	—
Spain	—
Italy	517.42
Greece	24.21
ASIA	
Iran	—
Israel	—
U. Arab Emirates	—
Pakistan	—
Bangladesh	229.33
Malaysia	—
Philippines Rep.	135.78
Korea	15.96
Hong Kong	—
China-Taiwan	17.10
Japan	51,011.63
AUSTRALIA & OCEANIA	
Australia	489.86
New Zealand	10.65
AFRICA	
Morocco	—
Egypt	—
Ghana	—
Nigeria	—
Rep. of S. Africa	3.34
TOTALS	61,564.80

Exports—U.S. Tall Oil Fatty Acids (Lbs.)

	1981	
	Over 2% Rosin	Under 2% Rosin
NORTH AMERICA		
Canada	1,509,458	3,421,916
Mexico	478,249	6,892,998
Guatemala	84,927	8,600
Salvador	12,000—	
Honduras	14,703—	
Costa Rica	102,907	43,935
Jamaica	103,152	—
Dominican Republic	10,020	—
Trinidad	—	27,300
Neth. Antilles	17,200	—
SOUTH AMERICA		
Colombia	1,854,283	21,840
Venezuela	951,686	1,434,010
Guyana	—	2,526
Surinam	75,460	—
Ecuador	24,190	—
Peru	82,685	19,356
Chile	3,926	—
Brazil	110,290	551,640
Argentina	134,694	631,818
EUROPE		
Sweden	56,990	110,040
Norway	15,580	—
Denmark	2,880	—
United Kingdom	1,315,548	347,700
Ireland	4,100	—
Netherlands	841,850	10,566,803
Belgium	61,453	—
France	2,575,474	66,780
West Germany	1,738,050	4,093,890
Switzerland	4,500	—
Spain	13,530	—
Portugal	6,918	—
Italy	22,050	339,194
Yugoslavia	4,500	—
ASIA		
India	6,560	241,657
Malaysia	154,350	—
Singapore	17,660	71,920
Indonesia	—	101,640
Phillipine Rep.	117,118	155,488
Korean Republic	151,084	805,186
China-Taiwan	176,339	431,778
Japan	2,082,346	5,775,198
AUSTRALIA & OCEANIA		
Australia	1,651,804	1,171,829
New Zealand	386,880	22,522
AFRICA		
Morocco	44,280	—
Nigeria	—	21,840
Rep. of S. Africa	4,679,541	137,760
TOTALS	21,701,215	37,517,164

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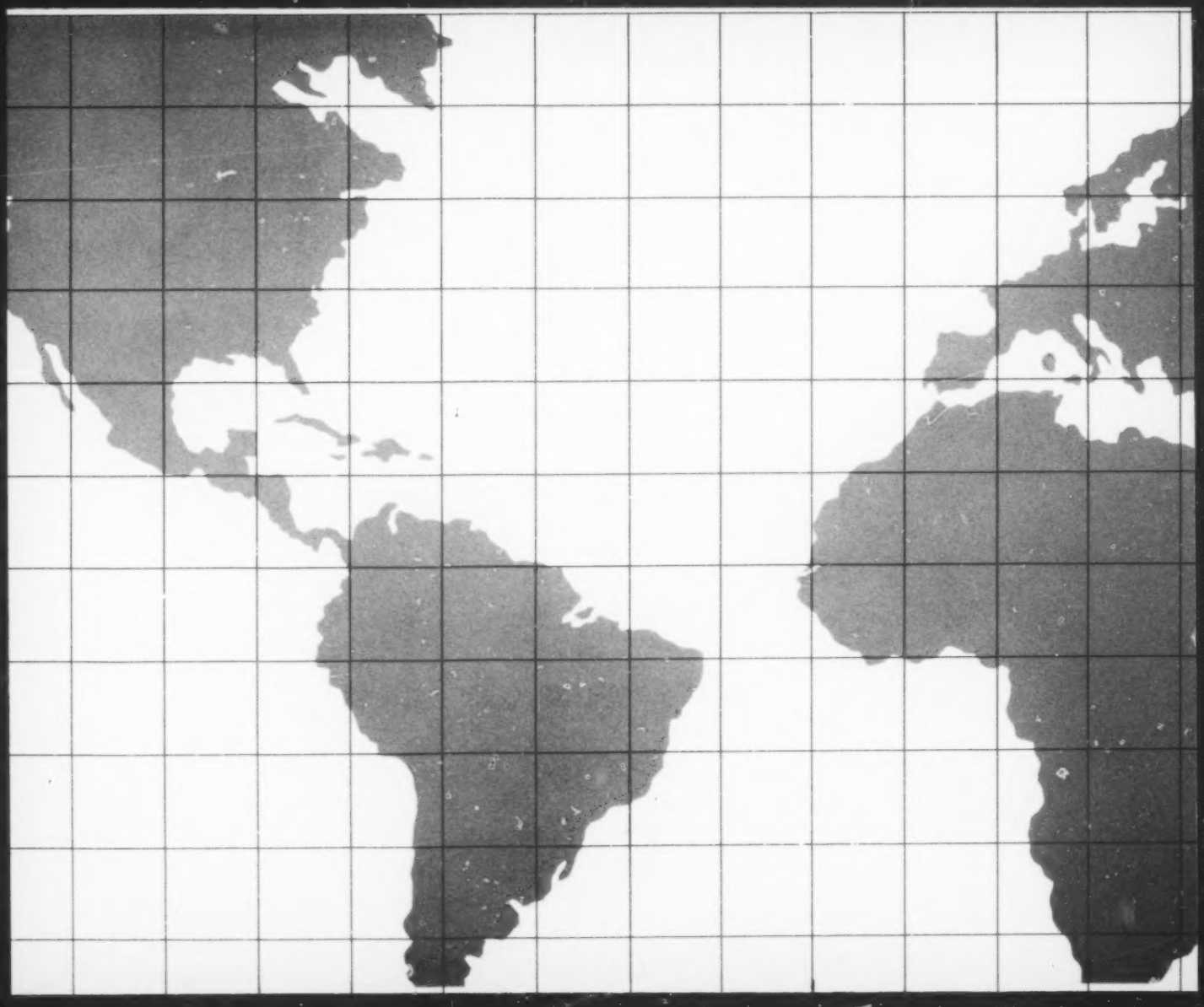
NAVAL STORES REVIEW

1982 INTERNATIONAL YEARBOOK



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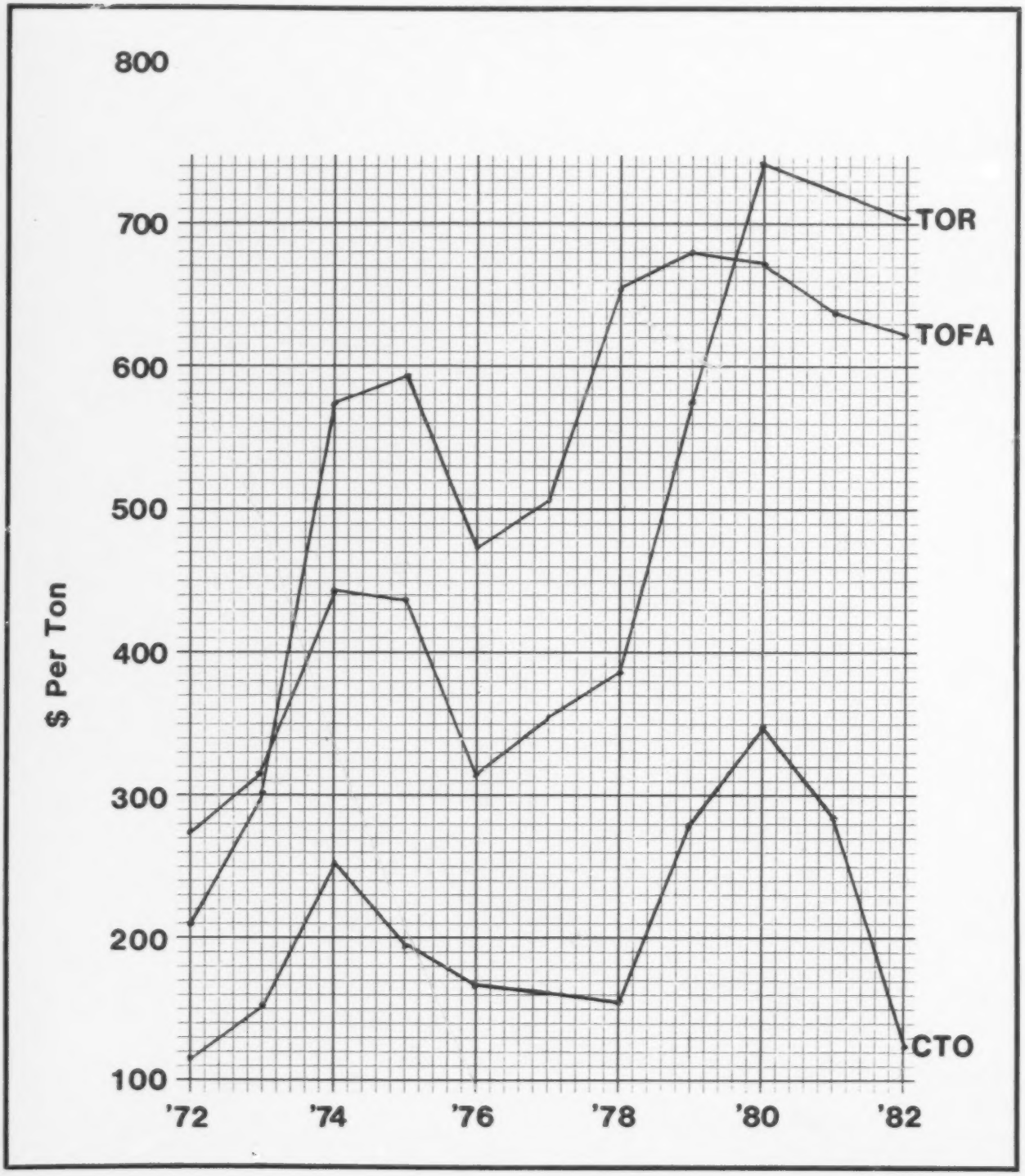
Export Prices For: Crude Tall Oil, Tall Oil Fatty Acids, Tall Oil Rosins

1972-1982



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Section 1
U. S. Naval Stores

- ROSIN
- TURPENTINE
- TALL OIL

U.S. ROSIN PRODUCTION (metric tons)

Calendar Year	Gum	Wood	Tall Oil	Total
1973	18.4	160.0	202.0	378.4
1974	13.2	142.5	180.0	336.4
1975	16.2	77.7	146.1	240.0
1976	15.3	119.7	183.4	318.5
1977	12.2	113.9	184.0	310.1
1978	8.5	109.0	192.3	309.8
1979	6.4	105.2	210.6	322.1
1980	5.4	104.0*	203.0	311.9*
1981	4.6	95.0*	201.6	301.2*
1982	4.0*	80.0*	176.4	260.4*

*Estimated

U.S. TURPENTINE PRODUCTION

Calendar Year	Gum	Wood	Refined Sulfate	Total
1973	1,143	3,536	22,629	27,308
1974	797	3,407	21,379	25,583
1975	1,006	1,890	18,575	21,472
1976	920	2,997	20,265	24,183
1977	731	2,618	20,297	23,646
1978	517	3,666	22,066	24,950
1979	369	2,439	23,449	26,257
1980	314	2,400*	24,979	27,689*
1981	270*	2,200*	23,310	26,020*
1982	230*	1,850*	21,283	23,363*

*Estimated

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U.S. TALL OIL

CRUDE TALL OIL (1000 metric tons)

	1978	1979	1980	1981	1982
STOCKS, JAN. 1	46.3	65.8	56.2	55.5	65.9
PRODUCED	733.5	769.7	795.6	798.9	715.6
PROCESSED	642.7	695.9	688.1	702.3	624.1
OTHER USES	7.9	5.6	4.2	6.7	7.1
EXPORTS	42.7	42.6	46.5	44.7	52.0
DOMESTIC SALES	19.7	33.3	53.5	30.6	15.9
STOCKS, DEC. 31	65.8	56.2	55.5	65.9	80.0

TALL OIL ROSIN (1000 metric tons)

	1978	1979	1980	1981	1982
STOCKS, JAN. 1	28.0	26.5	13.8	7.6	17.1
PRODUCTION	192.4	210.5	203.0	201.6	176.4
EXPORTS	33.8	44.6	39.6	23.6	15.9
DOMESTIC USE	160.0	177.2	169.3	168.5	153.5
STOCKS, DEC. 31	26.5	13.8	7.6	17.1	24.2

TALL OIL FATTY ACID (1000 metric tons)

	1978		1979		1980		1981		1982	
	Over 2%	Under 2%	Over 2%	Under 2%	Over 2%	Under 2%	Over 2%	Under 2%	Over 2%	Under 2%
STOCKS, JAN. 1	4.3	3.8	7.1	4.7	7.4	4.9	25.5	3.7	15.0	6.7
PRODUCTION	92.8	83.4	97.4	94.2	104.4	85.6	92.8	98.7	82.8	87.8
DOMESTIC USE	77.0	73.3	82.8	82.5	77.6	77.8	86.5	85.7	78.5	81.0
EXPORTS	13.0	9.2	14.3	12.1	8.7	9.1	16.8	9.9	10.5	9.2
STOCKS, DEC. 31	7.1	4.7	7.[illegible]	4.4	25.4	3.7	15.0	6.7	8.8	4.4

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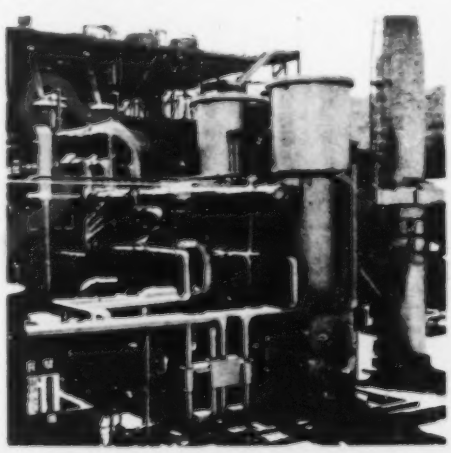

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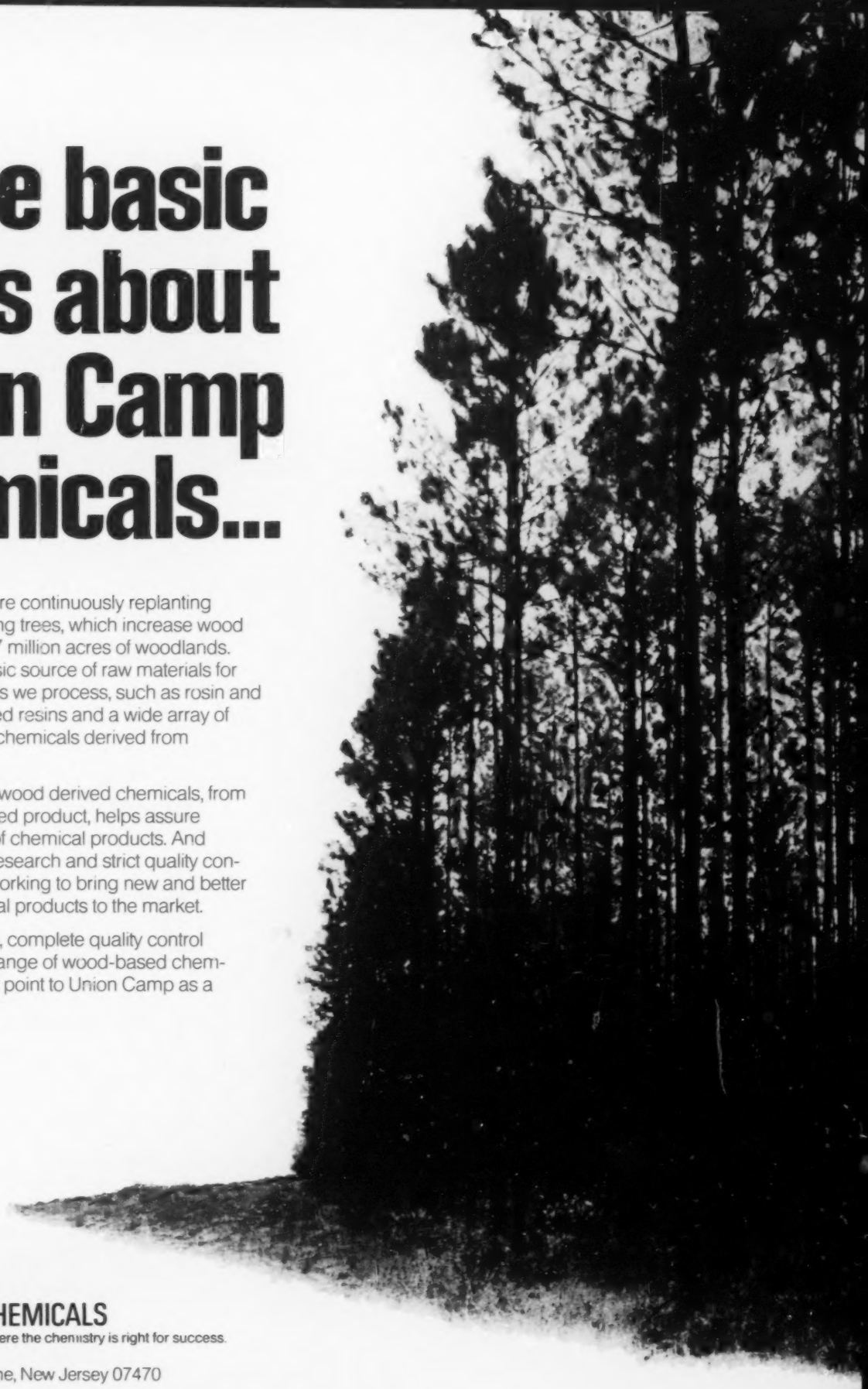

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Section 2

U. S. Naval Stores Imports

U.S. Naval Stores Imports

	1981 (Lbs.)	F.A.S. Value (Dollars)	1982 (Lbs.)	F.A.S. Value (Dollars)
GUM ROSIN				
Belize	40,000	21,470	190,256	47,564
Mexico	441,987	180,479	772,363	87,734
Honduras	640,842	311,059	350,746	102,782
Portugal	15,880,073	754,107	4,663,209	1,446,427
China	7,917,739	3,257,308	3,940,969	1,337,543
Taiwan	119,048	40,478	-----	-----
ROSIN (NSPF) *				
Belize	209,085	107,224	-----	-----
Canada	400,000	98,500	692	1,003
United Kingdom	67	1,715	9,291	1,824
Belgium	-----	-----	882	794
F.R. Germany	-----	-----	930	2,574
China	-----	-----	37,015	8,412
Japan	-----	-----	705	1,332
France	44,092	27,944	-----	-----
CRUDE GUM				
Canada	80,000	19,700	-----	-----
Honduras	16,596	9,326	39,419	12,199
United Kingdom	1,552,477	696,019	91	1,546
F.R. Germany	-----	-----	551	980
Switzerland	-----	-----	38	857
China	758,714	332,819	160,379	40,093
Japan	-----	-----	18	454
SPIRITS OF TURPENTINE				
Canada	528	892	4,953	6,516
Mexico	159,609	404,889	29,583	43,469
Honduras	17,100	39,975	56	360
United Kingdom	243	1,330	355	1,564
France	410	1,143	119	546
F.R. Germany	195	524	1,223	4,195
Portugal	-----	-----	40	791
Japan	62	500	30	1,331
China	264,795	94,507	-----	-----
Rep. of South Africa	177,026	59,856	-----	-----

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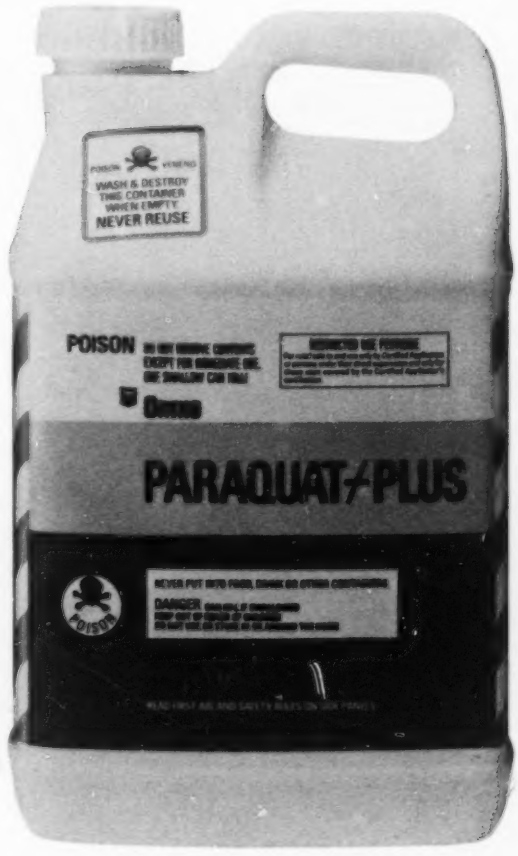

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ORTHO PARAQUAT

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Section 3
U. S. Naval Stores Exports

- ROSIN
- TURPENTINE
- EXPORTS BY COUNTRY
- TALL OIL

U.S. Exports — Rosin
(Metric Tons)

Years	Gum	Wood	Tall Oil	Total
1973	16,910	50,260	43,517	110,688
1974	4,832	39,764	32,589	77,284
1975	3,065	13,813	17,121	33,998
1976	3,144	24,745	42,023	69,913
1977	3,045	21,666	21,668	46,380
1978	4,189	22,139	46,215	77,543
1979	4,499	24,770	63,290	92,518
1980	3,272	21,331	66,648	91,242
1981	3,617	23,370	52,365	79,352
1982	1,929	10,318	43,198	55,445

U.S. Exports — Turpentine
(Gallons)

Years	Gum	Wood	Sulfate	
1973	163,542	5,098,883	.....	5,262,425
1974	111,910	1,106,549	.....	1,218,459
1975	77,766	152,230	.....	229,995
1976	79,737	707,576	.....	787,313
1977	55,820	1,152,909	.....	1,208,729
1978	288,178	3,508,810	1,323,073	5,022,554
1979	198,027	2,634,597	2,189,930	5,021,554
1980	171,098	2,900,454	4,637,199	7,708,751
1981	202,570	660,816	3,123,012	3,986,398
(Lbs.)				
1982	235,431	628,490	6,462,182	

U.S. Exports — Tall Oil
(Metric Tons)

	Crude Tall Oil	Tall Oil Fatty Acids
1973	28,453	33,879
1974	64,704	29,423
1975	44,048	13,914
1976	77,145	28,645
1977	43,827	27,882
1978	60,706	28,710
1979	50,860	32,234
1980	56,564	29,154
1981	55,850	26,860
1982	71,334	25,753

1982 U.S. EXPORTS BY COUNTRY
(1,000 lbs.)

	Gum	Wood	Tall Oil
Argentina	—	—	2,977
Australia	133	899	1,827
Belgium	—	—	5,379
Brazil	—	960	6,054
Canada	1,946	789	16,688
Columbia	—	—	388
Costa Rica	—	—	948
Denmark	—	233	—
Equador	—	—	139
Finland	—	83	—
France	—	312	1,366
Germany F.R.	669	1,661	5,456
Italy	152	366	1,866
Japan	675	1,642	6,815
Kenya	—	—	153
Korea	—	—	4,895
Mexico	—	—	1,820
Netherlands	—	11,691	8,818
New Zeland	—	136	—
Peru	—	—	350
Philippines	—	—	413
Rep. of South Africa	—	372	3,669
Spain	—	—	770
Sweden	—	—	130
Taiwan (China)	—	465	7,885
United Kingdom	165	1,852	2,978
Venezuala	—	437	3,487
Yugoslavia	—	—	60
Other Countries	513	851	1,116
TOTAL 1982	4,254	22,752	86,398
1981	5,666	42,273	115,446

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United States Exports of Rosin by Countries (1,000 Lbs.)

Argentina

Year	Gum	Wood	Tall Oil	Total
1973		325	1,524	1,849
1974	48	827	1,334	2,209
1975		187	2,040	2,289
1976		382	881	1,263
1977		306	1,146	1,452
1978		476	1,358	1,834
1979	267		4,681	4,948
1980	12	54	4,159	4,225
1981			4,905	4,905
1982	-----	-----	2,977	2,977

Brazil

Year	Gum	Wood	Tall Oil	Total
1973	1,236	8,902	10,362	20,500
1974	779	5,187	14,140	20,122
1975	160	5,925	6,561	12,646
1976		6,082	2,479	8,561
1977		9,128	2,172	11,300
1978	188	7,366	6,587	14,141
1979	321	10,879	14,818	26,018
1980	300	6,738	22,289	29,327
1981	1,220	3,388	15,751	20,359
1982	-----	960	6,054	7,014

Australia

Year	Gum	Wood	Tall Oil	Total
1973	3,134	2,939	1,239	7,312
1974	1,350	4,474	440	6,264
1975		432		432
1976	50	1,729	608	2,387
1977	354	1,494		1,848
1978	201	1,793	1,249	3,243
1979	268	1,464	1,307	3,039
1980	219	1,157	4,750	6,125
1981	172	1,174	2,294	3,640
1982	133	899	1,827	2,859

Canada

Year	Gum	Wood	Tall Oil	Total
1973	4,136	13,987	17,395	35,512
1974	1,578	12,812	16,106	30,496
1975	1,020	5,771	9,320	16,111
1976	705	5,402	14,185	20,292
1977	1,008	5,372	12,660	19,040
1978	3,507	3,345	16,254	23,106
1979	4,364	1,123	22,571	28,058
1980	2,006	1,015	17,778	20,799
1981	1,595	1,612	28,370	41,087
1982	1,946	789	16,688	19,423

Belgium

Year	Gum	Wood	Tall Oil	Total
1973	898	363	1,200	2,461
1974		218	509	727
1975				
1976			3,979	3,979
1977				
1978		869	3,563	4,432
1979		2,014	2,597	4,611
1980	46	136	6,836	7,018
1981			4,931	4,931
1982	-----	-----	5,379	5,379

Colombia

Year	Gum	Wood	Tall Oil	Total
1979			1,790	1,790
1980	18	76	1,531	1,625
1981		95	648	743
1982	-----	-----	338	338

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Denmark

Year	Gum	Wood	Tall Oil	Total
1973		254		254
1974		273		273
1975		199		199
1976		184		184
1977		386		386
1978		240		240
1979		439	463	902
1980	11	286	60	357
1981		247		247
1982	-----	233	-----	233

France

Year	Gum	Wood	Tall Oil	Total
1973	2,570	503	4,823	7,896
1974	489	478	1,098	2,065
1975	469		1,165	1,634
1976	444	265	4,632	5,341
1977	520	124	925	1,599
1978	259		6,762	7,021
1979	320	452	2,834	3,606
1980	558	252	9,278	10,088
1981		306	4,253	4,559
1982	-----	312	1,366	1,678

Germany

Year	Gum	Wood	Tall Oil	Total
1973	4,832	14,440	8,013	27,285
1974	964	6,714	6,264	13,942
1975	707	3,069	4,597	8,373
1976	793	7,201	6,093	13,087
1977	871	2,915	3,975	7,761
1978	984	1,064	3,595	6,643
1979	705	2,181	9,346	12,232
1980	674	4,105	10,262	15,041
1981	429	1,720	4,180	6,329
1982	669	1,661	5,456	7,786

Italy

Year	Gum	Wood	Tall Oil	Total
1973	599	1,440	102	2,141
1974	476	1,379	270	2,125
1975	816	489	579	1,854
1976	335	900		1,235
1977	315	1,038		1,353
1978	503	1,074	992	2,569
1979	838	1,190	1,304	3,332
1980	527	949	2,412	3,888
1981		785	2,095	2,880
1982	152	366	1,866	2,384

Japan

Year	Gum	Wood	Tall Oil	Total
1973	10,118	17,741	22,130	49,989
1974	2,356	8,947	7,365	18,668
1975	1,360	2,967	3,683	8,010
1976	2,237	4,442	22,459	29,138
1977	1,609	3,040	9,418	14,067
1979	1,177	3,437	30,798	35,412
1980	1,796	4,155	25,003	30,954
1981	1,258	4,740	11,801	17,799
1982	675	1,642	6,815	9,132

Korea Republic

Year	Gum	Wood	Tall Oil	Total
1973			4,594	4,594
1974		153	3,337	3,490
1975				
1976			3,559	3,559
1977			5,857	5,857
1978			9,842	9,842
1979			10,129	10,179
1980		9	7,360	7,369
1981			6,202	6,202
1982	-----	-----	4,895	4,895

Mexico

Year	Gum	Wood	Tall Oil	Total
1973	324	1,460	3,054	4,838
1974	44	741	3,944	4,729
1975			1,722	1,722
1976			1,987	1,987
1977				
1978			2,063	2,063
1979			1,880	1,880
1980	302		1,009	1,311
1981			1,355	1,355
1982	-----	-----	1,820	1,820

Netherlands

Year	Gum	Wood	Tall Oil	Total
1973	3,313	20,491	4,053	27,857
1974	1,195	17,447	2,003	20,645
1975	491	2,972	892	4,355
1976	659	12,236	8,682	21,577
1977	715	12,531	1,388	14,616
1978	587	9,970	8,354	18,911
1979	334	17,856	8,659	26,849
1980	22	19,331	6,253	25,606
1981		21,785	3,835	25,620
1982	-----	11,691	8,818	20,509

Peru

Year	Gum	Wood	Tall Oil	Total
1979	.....	.....	.....	
1980	257	782	185	1,224
1981	176	292	.....	468
1982	-----	-----	350	350

Philippines

Year	Gum	Wood	Tall Oil	Total
1979	.....	.....	1,145	1,145
1980	24	112	135	271
1981	.....	.....	356	356
1982	-----	-----	413	413

Republic of South Africa

Year	Gum	Wood	Tall Oil	Total
1973	286	2,365	916	3,567
1974	95	3,174	.....	3,269
1975	.....	2,224	1,101	3,321
1976	.....	2,036	743	2,779
1977	-----	852	933	1,785
1978	.....	1,521	2,352	3,873
1979	-----	1,890	3,184	5,074
1980	-----	1,097	4,449	5,546
1981	-----	896	3,865	4,761
1982	-----	372	3,669	4,041

Spain

Year	Gum	Wood	Tall Oil	Total
1973	.....	419	.....	419
1974	.....	157	.....	157
1975	.....	.....	.....	-----
1976	.....	281	.....	281
1977	.....	241	.....	241
1978	.....	-----	515	515
1979	-----	-----	1,059	1,059
1980	-----	97	1,397	1,494
1981	.....	-----	1,191	1,191
1982	-----	-----	770	770

Sweden

Year	Gum	Wood	Tall Oil	Total
1973	-----	433	-----	433
1974	-----	734	-----	734
1975	-----	211	.....	211
1976	-----	325	661	986
1977	-----	448	440	488
1978	-----	377	-----	377
1979	-----	-----	-----	.....
1980	-----	105	93	198
1981	-----	-----	-----	.....
1982	-----	-----	130	130

China (Taiwan)

Year	Gum	Wood	Tall Oil	Total
1973	221	1,042	4,854	6,117
1974	.....	1,350	2,406	3,756
1975	.....	.....	1,884	1,884
1976	.....	.....	5,006	5,006
1977	.....	413	2,198	2,611
1978	.....	675	5,691	6,466
1979	-----	629	9,013	9,642
1980	9	738	7,503	8,250
1981	.....	574	11,092	11,666
1982	-----	465	7,885	8,350

United Kingdom

Year	Gum	Wood	Tall Oil	Total
1973	2,801	14,040	5,150	21,991
1974	466	13,196	8,122	21,784
1975	237	3,205	3,527	6,969
1976	371	8,129	15,258	23,758
1977	463	5,779	4,660	10,902
1978	507	9,099	8,147	17,753
1979	482	7,524	7,779	15,785
1980	154	4,449	6,331	10,934
1981	262	3,261	4,389	7,912
1982	165	1,852	2,978	4,995

Venezuela

Year	Gum	Wood	Tall Oil	Total
1973	440	1,013	601	2,054
1974	90	1,640	44	1,774
1975	349	886	.....	1,235
1976	.....	1,873	.....	1,873
1977	.....	1,298	.....	1,298
1978	.....	3,178	2,385	5,563
1979	.....	702	2,130	2,832
1980	29	439	3,214	3,682
1981	-----	194	3,269	3,463
1982	-----	437	3,487	3,924

OTHER ROSIN EXPORTS
(Quantities too small to list by countries)

Year	Gum	Wood	Tall Oil	Total
1973	1,193	2,432	328	3,953
1974	400	2,519	312	3,231
1975	804	1,936	675	3,415
1976	718	2,418	311	3,447
1977	859	2,223	1,997	5,079
1978	799	2,666	2,145	5,610
1979	842	2,828	1,994	5,664
1980	233	783	4,633	5,649
1981	555	1,201	5,664	7,420
1982	513	851	1,116	2,480

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Exports — U.S. Crude Tall Oil* (2000 Lbs.)

	1978	1979	1980	1981	1982
NORTH AMERICA					
Canada	2,810	1,646	1,081	1,202	806
Mexico	1,219	4,166	4.032	4,577	1,852
Guatemala	6	—	—	5	12
El Salvador	—	32	—	—	—
Costa Rica	—	—	2	—	4
Panama	5	5	6	10	6
Jamaica	23	9	10	8	37
Haiti	37	12	36	—	—
Dominican Rep.	—	6	8	4	12
Neth. Antilles	4	—	—	2	2
SOUTH AMERICA					
Columbia	22	1	27	27	76
Venezuela	578	247	387	429	306
Guyana	17	22	20	13	2
Surinam	19	18	15	—	1
Equador	—	—	1	—	—
Peru	36	3	61	29	—
Chile	—	—	15	11	—
Brazil	557	5,462	2,777	1,187	518
Argentina	16	94	55	25	2
EUROPE					
Sweden	—	58	—	1	1
United Kingdom	6,191	5,035	—	9	16,888
Netherlands	22	734	1,068	1,022	911
Belgium	437	247	35	18	36
France	28	30	—	4	—
West Germany	2,202	1,054	42	527	176
Austria	—	—	333	—	—
Switzerland	—	—	—	—	108
Portugal	—	—	—	—	1
Italy	45	61	110	517	—
Greece	3	20	15	24	18
ASIA					
U. Arab Emirates	—	—	47	—	—
Pakistan	—	7	—	—	—
Bangladesh	—	—	—	229	—
Burma	—	—	—	—	3
Malaysia	2	3	2	—	1
Singapore	—	—	—	—	7
Philippines Rep.	185	191	34	136	168
Korea	—	311	—	16	7
Hong Kong	—	—	5	—	—
Taiwan — China	18	399	3	17	17
Japan	49,704	33,189	51,037	51,012	55,240
AUSTRALIA & OCEANIA					
Australia	290	305	74	490	225
New Zealand	39	58	—	11	4
AFRICA					
Morocco	—	—	11	—	—
Egypt	—	—	12	—	—
Ghana	—	4	—	—	—
Nigeria	28	76	258	—	13
Rep. of South Africa	2,359	2,558	733	3	1,162

*Includes Crude, Distilled & Acid Refined Tall Oils

Source: U.S. Department of Commerce

Tall Oil Fatty Acid Exports — (metric tons)

	1980		1981		1982	
	2% & Over Rosin	Under 2% Rosin	2% & Over Rosin	Under 2% Rosin	2% & Over Rosin	Under 2% Rosin
NORTH AMERICA						
Canada	1,577	1,810	755	1,711	669	1,253
Mexico	148	3,523	239	3,446	356	2,108
Guatemala	—	9	42	4	12	4
Honduras	19	—	7	—	9	—
Costa Rica	24	131	51	22	—	—
Trinidad	—	12	—	14	—	8
Jamaica	—	—	52	—	27	15
SOUTH AMERICA						
Columbia	1,008	17	927	11	476	209
Venezuela	527	1,112	476	717	806	537
Ecuador	18	—	12	—	11	—
Peru	91	2	41	10	68	8
Brazil	22	827	55	276	94	930
Argentina	38	139	67	316	62	193
Surinam	—	—	28	—	33	—
EUROPE						
Sweden	16	—	28	55	—	20
U.K	2,019	1,820	658	174	3,388	813
Netherlands	94	6,143	421	5,283	90	5,639
Belgium	44	1,150	31	—	50	68
France	64	574	1,288	33	1,157	12
West Germany	818	2,287	869	2,047	1,254	1,903
Italy	146	—	11	170	17	—
Switzerland	2	189	2	—	44	—
ASIA						
India	34	36	3	121	16	95
Singapore	—	55	9	36	—	36
Philippines	57	40	58	78	45	125
Korea	141	407	76	403	149	337
Taiwan	34	108	88	216	89	280
Japan	1,374	1,447	1,041	2,888	1,285	2,164
Malaysia	7	—	77	—	48	16
Indonesia	—	—	—	51	—	66
Thailand	—	—	—	—	—	48
AUSTRALIA	468	442	826	586	548	311
NEW ZEALAND	49	10	193	11	88	28
MOROCCO	79	—	22	—	—	—
ZAIRE	165	--	—	—	—	—
REP. of SOUTH AFRICA	739	24	2,340	69	203	26
OTHER*	45	5	57	12	29	24
TOTAL	9,816	22,319	10,851	18,758	11,117	17,270

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Section 4

Tall Oil Fractionators

UNITED STATES

	Capacity* 1981	(Short Tons) 1982
ARIZONA CHEMICAL COMPANY		
Panama City, Florida	105,000	105,000
Spring Hill, Louisiana	45,000	45,000
GEORGIA-PACIFIC		
Crossett, Arkansas	39,000	40,000
HERCULES INCORPORATED		
Franklin, Virginia	65,000	65,000
Hattiesburg, Mississippi	60,000	SHUT DOWN
Portland, Oregon	30,000	30,000
Savannah, Georgia	65,000	65,000
Burlington, Ontario	17,000	17,000
MONSANTO-EMERY		
Nitro, West Virginia	65,000	65,000
REICHHOLD CHEMICALS, INC. (Newport Division)		
Bay Minette, Alabama	36,000	40,000
Oakdale, Louisiana	60,000	60,000
SYLVACHEM CORPORATION		
Port St. Joe, Florida	100,000	110,000
UNION CAMP CORPORATION		
Savannah, Georgia	105,000	105,000
WESTVACO CORPORATION		
Charleston, S.C.	85,000	85,000
DeRidder, Louisiana	55,000	55,000
	946,000	887,000

* Based on Crude Tall Oil input

EUROPE

	Capacity 1980	(Metric Tons) 1982
AUSTRIA		
Krems Chemie/Krems a.d. Donau	13,000	13,000
BULGARIA		
Velingrad	4/5,000	4/5,000
FINLAND		
Enso-Gutzeil Osaheyhtio/ Imatra	32,000	40,000
Oulu Osakeyhtlo/Oulu	43,000	70,000
Valke/Valkeakoski	18,000	30,000
FRANCE		
Les Derives Resiniques & Terpeniques/ Dax	18,000	30,000
NORWAY		
M. Peterson & Sons/ Moss	20,000	40,000
POLAND		
Zaklada Celulozowo/ Swiecie	12,000	12,000
PORTUGAL		
Alegra S.A./Lisbon	3,000	3,000(?)
ROMANIA	3,000	3,000
SWEDEN		
Bergviks Hartsprodukter/ Sandarne	120,000	120,000
UNITED KINGDOM		
Union Camp Chemicals (U.K.) Ltd. Chester-le-Street	50,000	50,000
WEST GERMANY		
Huttenes-Albertus Werke/ Hannover	3,500	3,500

ASIA

JAPAN		
Arakawa Chemical Industries Ltd./ Osaka	15,000	15,000
Harima Chemicals Inc./ Kakogawa	20,000	20,000
Harima M.I.D./ Kakogawa	70,000	70,000
U.S.S.R.	66,000	66,000
NEW ZEALAND	---	10,000

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Section 5
World Naval Stores

- Production
- Consumption
- Exports
- Imports

(*Editor's Note:* All figures expressed in metric tons unless otherwise indicated.)

Argentina

PRODUCTION

	Gum Rosin	Turpentine	Pine Oil
1973	120		
1974	250		
1975	500		
1976	750		
1977	1,200		
1978	2,000		
1979	3,500		
1980	4,200	1,100	600
1981	5,000	1,300	700

IMPORTS

	Gum Rosin	Turpentine	Pine Oil
1973	6,939	.....	.....
1974	9,563	279	584
1975	7,442	19	391
1976	6,148	17	313
1977	3,212	0	412
1978	4,890	6	207
1979	3,000	11	83
1980	2,300	.....	225
1981	1,000	.....	30

CONSUMPTION

	Gum Rosin	Turpentine	Pine Oil
1973	7,059	-----	.....
1974	9,813	-----	-----
1975	7,942	-----	.....
1976	6,898	-----	-----
1977	4,412	-----	-----
1978	6,890	-----	-----
1979	6,500	-----	-----
1980	6,500	1,100	-----

EXPORTS

1981	**500**	**30**	**20**

Australia

IMPORTS

	Gum Rosin	Wood Rosin, Resin Acids	Tall Oil	Turpentine (liters)
1978	6,767	2,423	665	6,733,523
1979	5,936	1,109	1,977	8,565,202
1980	7,292	2,593	479	5,410,317

Austria

IMPORTS

	Gum Rosin	Turpentine	Tall Oil
1973	5,017	818	7,420
1974	5,679	293	8,694
1975	2,665	.....	6,733
1976	5,552	18	8,193
1977	4,416	78	6,122
1978	3,455	51	12,680
1979	26	22	978
1980	1,418	210	10,445
1981	1,417	326	13,784
1982	1,438	253	14,842

EXPORTS

	Gum Rosin	Turpentine	Tall Oil
1973	20	644	486
1974	1,077	143	621
1975	270	190	103
1976	0	.....	349
1977	0	.....	220
1978	7	.....	598
1979	11	65	43
1980	178	.....	656
1981	195	125	416
1982	1	44	445

Belgium

IMPORTS

	Rosin	Turpentine
1973	4,638	746
1974	3,352	720
1975	1,140	568
1976	3,033	616
1977	2,138	711
1978	1,447	.....
1979*	1,234	689
1980	3,215	646
1981	2,710	694
1982	2,294	.....

Brazil

IMPORTS

	Gum Rosin	Tall Oil Rosin	Turpentine	Pine Oil
1973	22,338		253	
1974	45,935			
1975	8,645			
1976	23,972			
1977	19,202			
1978	32,007	1,373	15	4,889
1979	33,390	2,900	14	5,375
1980	27,076	5,383	15	4,265
1981	19,852	4,507	18	3,544

Canada

IMPORTS (1,000 lbs.)

	Rosin	Turpentine	Tall Oil, Pitch
1975	9,897	2,040	5,244
1976	12,364	2,906	6,280
1977	13,021	2,041	1,669
1978	13,557	2,098	2,574
1979	13,936	1,664	3,073
1980	10,734	1,564	2,497
1981	4,757	515	1,184

Finland

PRODUCTION

	Crude Turpentine	Crude Tall Oil	Tall Oil Rosin
1973	10,287	80,535	17,315
1974	11,620	84,783	15,214
1975	8,544	71,282	9,892
1976	9,172	74,568	15,073
1977	6,624	66,726	14,875
1978	7,907	86,904	13,515
1979	10,920	111,584	N.A.
1980	11,567	117,265	22,820
1981	11,749	117,408	23,614

EXPORTS

	Turpentine (All Types)	Tall Oil Rosin	Tall Oil
1973	6,652	6,320	17,944
1974	9,949	5,691	41,527
1975	6,374	4,176	32,906
1976	7,829	8,910	32,880
1977	4,795	1,996	36,365
1978	9,575	8,669	39,810
1979	10,821	18,834	38,806
1980	10,258	14,942	40,582
1981	12,555	19,145	41,481

IMPORTS

	Rosin
1973	2,821
1974	1,648
1975	2,401
1976	1,391
1977	358
1978	1,097
1979	753
1980	509
1981	864

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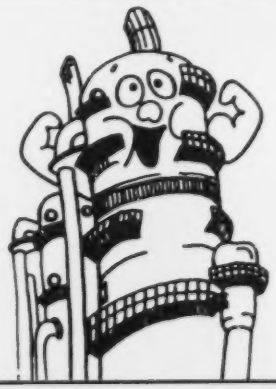

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France

PRODUCTION

	Rosin	Turpentine
1973	11,700	3,100
1974	8,750	2,232
1975	8,770	2,244
1976	7,490	1,885
1977	3,000	850
1978	2,660	680
1979	2,380	610
1980	2,100	540
1981	1,980	510
1982	2,030	520

CONSUMPTION

	Rosin	Turpentine
1973	36,000	14,000
1974	38,000	15,700
1975	20,481	6,232
1976	35,378	13,960
1977	22,300	8,450
1978	29,440	9,200
1979	30,270	9,600
1980	26,984	8,046
1981	21,764	8,179
1982	21,300	7,438

Greece

PRODUCTION			EXPORTS	
	Gum Rosin	Turpentine		Gum Rosin
1974	11,866	2,967	1974	11,602
1975	10,812	2,613	1975	5,969
1976	10,919	2,277	1976	6,331
1977	8,618	1,705	1977	4,502
1978	5,840	1,138	1978	5,893
1979	6,306	1,269	1979	2,718
1980	6,794	1,479	1980	5,976
1981	7,080	1,706	1981	3,533
1982*	8,910	2,295	1982	2,300

*Estimated

F. R. Germany

IMPORTS

	Rosin	Turpentine
1973	119,319	6,633
1974	99,523	6,903
1975	65,583	4,715
1976	61,642	4,732
1977	55,702	2,636

	Rosin			Turpentine	
	Gum	Wood	Tall Oil	Gum	Sulfate
1978	47,420	1,536	10,338	1,728	951
1979	49,629	794	16,565	1,885	60
1980	51,863	2,000	19,129	1,919	98

India

PRODUCTION	Oleoresin	Gum Rosin	Gum Turpentine
1973	48,970	36,728	12,242
1974	55,000	41,250	13,750
1975	75,000	56,250	18,750
1976	63,584	47,700	15,884
1977	56,800	42,600	14,200
1978	50,000	37,500	7,499
1979	48,000	36,000	7,200
1980	46,000	34,500	6,900
1981	41,500	31,125	6,225
1982	42,500	31,875	6,375

CONSUMPTION	Rosin	Turpentine
1974	41,251	13,750
1975	46,500	18,750
1976	47,700	10,149
1977	42,600	9,066
1978	41,000	7,499
1979	36,000	7,200
1980	41,500	6,900
1981	30,000	6,225
1982	31,875	6,375

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Japan

IMPORTS

	Rosin	Turpentine Oil	Crude Tall Oil
1973	93,667	7,596	36,819
1974	70,861	8,459	47,974
1975	38,569	3,555	38,288
1976	64,945	6,126	45.904
1977	59,956	7,728	52,480
1978	57,780	5,731	54,325
1979	73,008	6,786	65,668
1980	56.931	6,517	67.025
1981	57,934	6,340	59,244
1982	42,432	5,803	70,220

Mexico

PRODUCTION

	Pine Gum	Gum Rosin	Turpentine
1973	.....	43,500	9,800
1974	65,055	45,438	11,059
1975	63,915	44,740	10,865
1976	56,207	39,344	9,555
1977	57,000	39,900	9,690
1978	57,500	40,250	9,775
1979	60,040	42,028	10,207
1980	61,267	42,886	10,415
1981	64,840	45,388	

EXPORTS

	Rosin

Netherlands

IMPORTS

	Rosin (Gum & Tall Oil)	Rosin (Wood)	Turpentine	Crude Tall Oil
1973	21,385	.....	321	.....
1974	32,698	.....	442	37,918
1975	11,930	.....	170	30,782
1976	20,225	.....	244	.....
1977	16,830	.....	251	24,111
1978	14,938	2,211	334	5,372
1979	16,259	1,575	248	3,598
1980	16,647	3,517	211	3,027
1981	10,692	2,991	283	2,902

EXPORTS

	Rosin	Other Rosins and Pitch	Crude Tall Oil	Turpentine
1974	950	3,141	2,342	49
1975	835	1,484	1,507	
1976	1,105	814	1,431	25
1977	3,159	494	2,688	22
1978	2,193	265	582	32
1979	599	1,897	1,356	81
1980	1,119	525	12	56
1981	1,317	96	----	159

Norway

IMPORTS

	Rosin	Turpentine	Crude Tall Oil
1973	4,213	319	.....
1974	4,249	221	12,711
1975	3,284	201	12,060
1976	3,553	193	.....
1977	1,828	213	.....
1978	1,532	209	13,824
1979	1,237	307	17,239
1980	906	212	19,336
1981	963	132	16,605
1982	442	198	15,572

EXPORTS

	Rosin	Turpentine
1980	1,920	344
1981	2,306	263
1982	2,697	482

People's Republic of China

PRODUCTION

	Rosin*	Turpentine*
1973	180,000	36,000
1974	180,000	35,000
1975	110,000	15,000
1976	110,000	10,000
1977	110,000	10,000
1978	200,000	45,000
1979	250,000	55,000
1980	310,000	60,000
1981	310,000	60,000

*Estimated

Portugal

PRODUCTION

	Gum	Rosin	Turpentine
1973	137,828	109,170	26,026
1974	138,963	108,002	25,682
1975	137,779	108,874	26,229
1976	100,319	78,849	18,070
1977	123,968	91,851	21,510
1978	96,280	75,257	17,325
1979	105,763	83,099	19,341
1980	120,000	94,000	22,000
1981	134,339	93,014	21,137
1982	123,627	92,188	20,635

EXPORTS

	Rosin	Turpentine
1973	97,421	16,583
1974	108,576	15,377
1975	49,955	9,389
1976	84,581	18,743
1977	65,793	13,007
1978	109,312	10,558
1979	92,334	13,474
1980	79,274	9,648
1981	73,879	14,523

Spain

PRODUCTION

	Gum	Rosin	Turpentine
1973	42,000	29,400	8,400
1974	42,000	29,400	8,400
1975	39,000	24,500	7,000
1976	33,600	28,000	5,600
1977	13,200	11,000	2,200
1978	21,300	12,700	4,000
1979	20,000	13,250	4,200
1980	26,000	18,200	5,200
1981	25,000	17,500	5,000
1982	26,000	18,000	5,460

Sweden

PRODUCTION

	Crude Tall Oil	Crude Sulfate Turpentine
1977	138,064	7,888
1978	160,319	8,793
1979	175,821	10,265
1980	165,584	11,583
1981	162,920	11,583

IMPORTS

	Gum and Wood Rosin	Tall Oil Rosin	Turpentine
1977	1,436	3,230	229
1978	346	1,821	197
1979	974	2,213	203
1980	991	2,061	174
1981	678	1,651	195
1982	931	1,195	152

EXPORTS

	Crude Tall Oil	Tall Oil Rosin	Crude Sulfate Turpentine
1977	50,501		8,217
1978	52,814		9,800
1979	47,932		10,150
1980	46,469		10,241
1981	43,233		6,904
1982	36,473		8,743

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IMPORTS

	Rosin	Turpentine Oil	Tall Oil
1973	5,471	881	91
1974	4,717	837	39
1975	2,954	490	63
1976	2,883	467	95
1977	3,423	494	269
1978	3,871	642	74
1979	3,879	503	153
1980	3,657	571	276
1981	3,054	431	353
1982	3,155	436	536

United Kingdom

IMPORTS

	Rosin	Turpentine
1973	43,407	536
1974	41,752	830
1975	20,206	1,078
1976	37,824	1,118
1977	36,479	533
1978	34,143	—
1979	35,299	616
1980	33,127	665
1981	22,163	418
1982	19,139	400

Yugoslavia

PRODUCTION

Rosin (80%) and Turpentine (20%)

1973	2,464
1974	4,868
1975	4,662
1976	4,748
1977	3,368
1978 (Est.)	3,630
1979 (Est.)	3,411

IMPORTS

	Combined Rosin & Turpentine	Rosin	Crude Turpentine	Tall Oil
1973	3,572	-----	-----	-----
1974	4,894	-----	-----	-----
1975	4,320	-----	-----	-----
1976	912	-----	700	211
1977	2,793	-----	2,531	260
1978	-----	165	24	158
1979	----	158	10	136

EXPORTS

	Tall Oil & Rosin	Turpentine Oil
1976	952	5
1977	1,019	38
1978	1,255	391
1979	1,158	200

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Section 6
World Naval Stores

• Production

Rosin Production by Countries (All Types) (Metric Tons)

	1979	1980	1981	1982
Argentina	3,500	4,200	5,000	-----
Finland	---	22,320	23,614	-----
France	2,380	2,100	1,980	2,030*
Greece	6,306	6,794	7,080	8,910*
India	36,000	34,500	31,128	31,875
Mexico	42,028	42,886	45,388	-----
People's Republic of China	250,000	310,000	310,000	-----
Portugal	83,099	94,000	93,014	-----
Spain	13,250	18,200	17,500	18,000
U.S.A. (Includes Wood Rosin Est.)	322	312	301	260

*Estimated

World Turpentine Production by Countries (1,000 Gallons)

	1979	1980	1981	1982
Argentina	---	1,100	1,300	-----
Finland	10,920	11,567	11,749	-----
France	610	540	510	520
Greece	1,269	1,479	1,206	2,295*
India	7,200	6,900	6,225	6,375
Mexico	10,207	10,415	-----	-----
People's Republic of China	55,000	60,000	60,000	-----
Portugal	19,341	22,000	21,137	-----
Spain	4,200	5,200	5,000	5,460
U.S.A.	26,257[1]	27,689[1]	26,020[1]	23,363[1]

[1] U.S. Gallons

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